Jack of all trades, masters of everything: From a specialized to a generalized way of teaching and learning in higher education

Mil usos, maestros de todo: desde una forma especializada a una generalizada en la enseñanza y el aprendizaje en educación superior

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Abstract

In the context of advanced technology, increased knowledge, complex problems, and global issues, topics related to science and education need to be reimagined and deconstructed. All the proposed pedagogies developed throughout history need to be assessed to figure out which one would be the most suitable according to the current times. Although all of them offered some advantages and worked in their respective sociohistorical contexts, a theorical and pragmatic view should be used to get the best of those pedagogies. Polymathic pedagogy is the proposed way of teaching and learning, where the main educational actors (students-teachers) work together around a systemic paradigm, grounded in the ideal of the unity of knowledge, in which disciplinary, interdisciplinary, multidisciplinary and transdisciplinary approaches draw different theoretical and practical perspectives on the learning-teaching process that influences the biological, psychological, and social aspects of the individual, including the environment. An integrative and holistic approach of all the systems does not mean that the individual needs to acquire and accumulate merely information. Instead, it is a pragmatic way of choosing the appropriate knowledge and applying it in an adequate context.

Keywords: Complexity, higher education, teaching, multidisciplinarity, polymathic pedagogy.

Resumen

En el contexto de la tecnología avanzada, incremento en el conocimiento, problemas complejos y asuntos globales, los temas relacionados con la ciencia y la educación necesitan ser re-imaginados y deconstruidos. Todas las pedagogías propuestas desarrolladas a través de la historia requieren ser evaluadas para determinar cuál de ellas está más acorde a la actualidad. Aunque todas ellas ofrecieron algunas ventajas y funcionaron en sus contextos sociohistóricos, una visión teórica y pragmática debe de utilizarse para sacar lo mejor de esas pedagogías. La pedagogía polimática es la propuesta de enseñanza y aprendizaje en la que los actores principales (estudiante-profesor) trabajan juntos alrededor de un paradigma sistémico, fundamentado en el ideal de la unidad del conocimiento, en el cual enfoques disciplinarios, interdisciplinarios, multidisciplinarios y transdisciplinarios juntan diferentes perspectivas teóricas y prácticas en el proceso de enseñanza-aprendizaje que influye en los aspectos biológicos, psicológicos y sociales del individuo, incluyendo el medio ambiente. Un enfoque integral y holístico de todos los sistemas no significa que el individuo necesite adquirir y acumular meramente información. En vez de eso, es una forma pragmática de escoger el conocimiento apropiado y aplicarlo en el contexto adecuado.

Palabras clave: Complejidad, educación superior, enseñanza, multidisciplinariedad, pedagogía polimática.

INTRODUCTION

As individuals living in dynamic times, where technology and scientific knowledge is increasing exponentially under the context of a COVID-19 post-pandemic, globalization, inequity issues, environmental climate change, economic crises, rise of anti-democratic forces, war, and energy problems, it is not surprising that any human activity has been affected positively or negatively. Plus, different factors and forces create mega-tendencies that impact directly or indirectly.

In the case of higher education institutions, they cannot be the exception to the rule. COVID-19 brought some challenges in accomplish educational goals (Neuwirth et al., 2020); artificial intelligence (AI) as a tool can be promising in promoting student success, by helping teachers in providing self-paced progress, personalized learning and pedagogical improvement, but in the other hand there are still some ethical and gap issues in using such technology (Zeide, 2019); although higher education is a strong predictor of employment (Shabbir Ali & Hina, 2018), issues like the lack of preparation for work (Cassuto, 2015) and not enough positions and jobs for well-prepared graduates and PhDs (Larson et al., 2014) led current and prospective students to question if higher education is worth the time, effort and money under a marketized and utilitarian context (Tomlinson, 2018). Those and all other changes happening in higher education from the late 20th and early 21th centuries are easy to identify but difficult to integrate and discern; hence problems originated are hard to solve (Altbach et al., 2019). In today's world, it is undeniable that the rapid advancement of technology, the increasing complexity of global issues, and the abundance of knowledge available require a reevaluation and reconstruction of the topics related to science and education.

The history of education is filled with various pedagogies that have been developed and employed in different sociohistorical contexts. These pedagogies have been developed to address the needs and challenges of their respective contexts. For instance, the traditional pedagogies focused on memorization and regurgitation of information, which was suitable for the industrial age, when rote learning was considered necessary for work in factories (Ahmed & Ahmad, 2017). However, in the current times, with the abundance of information, such pedagogies are no longer effective. Also, traditional pedagogies that have been employed throughout history

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may no longer be suitable in the current times, and therefore, it is necessary to assess which ones are most appropriate. The ideal pedagogy for the current times should be grounded in the unity of knowledge, where students and teachers work together to apply a systemic paradigm that incorporates different theoretical and practical perspectives on the learning-teaching process.

Under the changing circumstances, past and current pedagogical approaches had been developed for higher education, like inclusive (Stentiford & Koutsouris, 2021), problem-oriented (Acton, 2019), relational (Gravett et al., 2021), transformative (Lotz-Sisitka et al., 2015), intercultural (O'Neill & Viljoen, 2021), sustainable (Cotton et al., 2009), critical (Ordoñez, 2002), hybrid (Rama, 2021), competencies (Bolívar, 2008) and design (Chan-Pech, 2022). However, such approaches need to be reimagined and deconstructed by having a deep understanding of them and an assessment of their effectiveness in terms of completion of achievements and objectives whom teachers, students and society in general want to pursue. Besides that, it is imperative to compare how all the pedagogical systems are being adjusted in the needs and requirements of the current complex environment, where sometimes they are not able to develop a deep understanding of reality. The fact that there are different pedagogies plus a wide range of theories of learning where such pedagogies rely, reflects the complexities of the educational practice (Jorg et al., 2007).

TALKING ABOUT COMPLEXITIES, ESPECIALLY IN EDUCATION

Any individual who is interested in education practices needs to understand that this is a complex phenomenon, and it is necessary to consider its multiple dimensions when thinking about pedagogy. The complexity theory posits that the world is composed of interconnected systems that interact in complex and dynamic ways. This perspective recognizes that simple cause-and-effect relationships do not explain the complexity of the world. Instead, complex systems are characterized by feedback loops, non-linear relationships and emergent properties (Manson, 2001). Therefore, educational practice should consider the complexity of the systems that shape learning, including the individual, the environment and society.

Incorporating complexity theory and systems thinking into educational practice implies a shift from a reductionist and linear perspective to an integrative and holistic one. This approach acknowledges the interdependence of different systems and the importance of their change, interconnectedness, feedback, non-linearity, history-dependency, self-organization, adaptiveness, trade-offs, counterintuitiveness and misunderstanding (Sterman, 2000). Educational practice should recognize that learning is a complex and dynamic process that involves multiple levels of systems and feedback loops in all its components. Therefore, educational practices should be designed to foster the emergence of learning, which is a non-linear and dynamic

process that involves the integration of different knowledge systems. This approach requires a systemic view of education, where educational actors work together to co-create knowledge that is grounded in the complexity of the world (Martin & Dismuke, 2018).

The complexity of the reality, the complexity of the human being, the complexity of the society, the complexity of the environment, and the complexity of the scientific practice of education all need to be taken into account when developing an effective educational philosophy.

Complexity of the reality

Complexity, as a inherent characteristic of our life, primarily relates to the quantity and diversity of elements within an entity and the intricacy of their interconnected structure, whether it's in terms of organization or functionality (Salvador & González, 2017). Any type of system or process, anything that constitutes a structured whole made up of interconnected components, possesses a degree of complexity. Thus, a wide range of things can exhibit varying levels of complexity, such as natural objects (like animals), physical creations (such as computers), mental processes (like thinking and language), bodies of knowledge, and so forth. To a greater or lesser extent, complexity permeates the entire realm of reality, extending to the domains of fiction (Rescher, 1998).

From an educational philosophy perspective, the complexity of reality is a crucial element of education as it enables individuals to understand and navigate the intricate world they live in. Education should, therefore, not only focus on acquiring knowledge but also on fostering critical thinking skills and creativity to solve complex problems. Additionally, education should help individuals understand the interconnectedness of different systems in the world and the impact of their actions on those systems. By adopting this perspective, educators can prepare individuals to be active and responsible global citizens who can contribute positively to society (Jacobson & Wilensky, 2006).

However, having a systems and complexity thinking perspective, education should equip individuals with the necessary skills and knowledge to comprehend the complex systems that govern our world. Complex systems comprise interconnected and interdependent components that interact with each other in intricate ways, and their behavior can be challenging to predict. Therefore, education must prepare individuals to approach problems systematically and holistically, considering the intricate relationships among the various components. Through this lens, individuals can gain a deeper understanding of the world, make more informed decisions, and generate innovative solutions to complex problems.

Under a pragmatic view, education must prepare individuals to navigate the complex reality they face in their daily lives. It must focus on providing practical knowledge and skills that enable individuals to solve real-world problems. This implies that education must be tailored to meet the needs of the learners and the demands of their environment. The pragmatic view emphasizes the importance of experiential learning, where individuals learn by doing and apply their knowledge to real-world problems. Thus, education must provide individuals with opportunities to engage in hands-on activities, collaborate with others, and reflect on their experiences to develop practical skills that they can apply in their daily lives (Davis & Sumara, 2006).

Complexity of the human being

The complexity of the human being is another fundamental dimension of education. Humans are complex beings that possess multiple dimensions, including physical, emotional, social, and cognitive aspects. Complexity acknowledges that humans are multidimensional beings, consisting of various hierarchical, interdependent open and differentiated complex parts that interact and affect one another (Paravano, 2021). The complex nature of human beings implies that education should not be approached as a one-dimensional process but as a multifaceted, holistic endeavor. Hence, the educational system should recognize and integrate the multiple dimensions of human experience to provide a more comprehensive learning environment.

One of the critical dimensions of human complexity is physicality. Humans are embodied beings, and their physical bodies play a significant role in their experiences, emotions, and learning. Physicality encompasses not only the biological aspect of human beings but also their sensory and perceptual abilities which work around the concept of time (Madonado, 2022). Consequently, education should consider the physical dimension of human beings by providing opportunities for physical activities, sensory exploration, and hands-on learning experiences.

Another fundamental dimension of human complexity is emotionality (Colombetti, 2003). Human beings are emotional creatures, and emotions are an integral part of their experiences and interactions. Emotions can significantly influence learning and motivation, and therefore, education should aim to support emotional regulation and foster positive emotional experiences. Education should provide opportunities for emotional expression, reflection, and empathy to promote emotional well-being and social connections.

The social dimension is another critical aspect of human complexity. Humans are social creatures, and their social interactions and relationships shape their experiences, values, and beliefs. The social dimension of human beings encompasses not only their interpersonal relationships but also their cultural, political, and historical contexts. Therefore, education should aim to support social connections and diversity

by providing opportunities for collaboration, communication, and cultural exchange (Aureli & Schino, 2019).

Finally, cognitive complexity is a crucial dimension of human beings. Humans possess advanced cognitive abilities that allow them to think, reason, and solve complex problems. For example, intelligence—as an important aspect in the cognitive dimension—is itself a complex subject of research (Stankov, 2003). Education should aim to foster cognitive development by providing opportunities for critical thinking, creativity, and problem-solving. Additionally, education should recognize the interdependence between cognitive, emotional, and social dimensions of human beings and integrate these dimensions into learning experiences (Immordino-Yang et al., 2019; Contreras-Sanchez et al., 2023).

Complexity of society

The complexity of society is another important dimension of education. Society is complex because it is made up of many different systems that interact with each other in complex ways (Araujo, 2019). Education should prepare individuals to navigate and contribute to society in a meaningful way.

From a systemic and complexity theory perspective, it is important to understand that society is complex, not only because of its size and diversity, but also because it consists of many different systems that interact with each other in complex ways. These systems can be physical, biological, social, economic, political, or cultural, and they are interconnected and interdependent (Flaherty, 2019). For example, the economy affects education, which in turn affects the labor market, which affects the economy, and so on. Therefore, it is crucial for education to prepare individuals to navigate and contribute to this complex system in a meaningful way.

One of the implications of the complexity of society for education is the need to adopt a holistic and interdisciplinary approach. This means that education should not be limited to the acquisition of isolated skills or knowledge but should also involve the development of critical thinking, problem-solving, and communication skills that are essential for understanding and engaging with complex systems. Moreover, education should integrate different disciplines, perspectives, and methodologies to provide a more comprehensive and nuanced understanding of society. For instance, combining insights from psychology, sociology, economics and political science can provide a more accurate understanding of social issues such as inequality, power and justice.

Another implication of the complexity of society for education is the need to foster adaptive and resilient individuals who can cope with uncertainty, change and diversity. This involves promoting skills such as flexibility, creativity, empathy and collaboration, which are crucial for adapting to new situations, solving complex problems and engaging with diverse perspectives. Education should also provide opportunities

for individuals to explore different domains, interests and identities, and to develop a sense of agency and purpose. By doing so, education can help individuals to find their place and role in the complex society and to contribute to its improvement and transformation.

Finally, the complexity of society highlights the importance of lifelong learning and continuous development. Since society is constantly evolving and changing, individuals need to be able to adapt and learn throughout their lives. This requires a culture of learning that values curiosity, exploration, experimentation and feedback, and that provides diverse and accessible learning opportunities. Education should not end with formal schooling but should continue throughout one's life, through different modalities such as online courses, apprenticeships, mentoring, or volunteering. By fostering a culture of lifelong learning, education can help individuals to stay engaged, relevant, and fulfilled in a complex and dynamic society.

Complexity of the environment

The complexity of the environment is another important dimension of education. The environment is complex because it is made up of many different systems that interact with each other in complex ways. Education should prepare individuals to understand and contribute to the environment in a meaningful way. Thus, understanding these interconnections is essential for developing effective strategies to address environmental challenges and achieve sustainability (Leff, 2007; Martínez, 2014).

Furthermore, this systemic and complex approach suggests that education should prepare individuals to understand and contribute to the environment in a meaningful way. This means that education must not only provide students with knowledge about the environment but also help them develop the skills, attitudes, and values necessary to engage with environmental issues in a constructive and proactive manner. This includes fostering critical thinking, creativity, and innovation to develop sustainable solutions that consider the interconnectedness of environmental systems.

Moreover, the complexity of the environment also requires a transdisciplinary approach to education. Transdisciplinary education encourages collaboration between different fields of study, including natural sciences, social sciences, humanities, and the arts, to tackle complex environmental issues. By engaging with multiple perspectives and disciplines, students can develop a more holistic understanding of the environment and its interconnections, which can lead to more effective and sustainable solutions (Kiatkoski et al, 2022).

In summary, a systemic and complex approach to environmental education emphasizes the interconnectedness of various environmental systems and the need to prepare individuals to engage with environmental issues in a meaningful way. It requires a transdisciplinary approach that encourages collaboration between differ-

ent fields of study, fosters critical thinking and creativity, and develops sustainable solutions that consider the interconnectedness of environmental systems. By adopting this approach, we can equip individuals with the knowledge, skills, attitudes, and values necessary to create a more sustainable future.

Complexity of the scientific practice of education

The complexity of the scientific practice of education is another important dimension of education. Education is a complex phenomenon, and it is necessary to consider the different approaches to education when thinking about pedagogy (López, 2017). The scientific practice of education involves the use of empirical evidence to inform educational practice to navigate this complexity. However, it is important to acknowledge that the complexity of the scientific practice of education itself presents challenges that need to be addressed.

One challenge is that education involves multiple stakeholders, including educators, learners, families, and communities. The needs and perspectives of these stakeholders may not always align, and balancing their interests requires careful consideration (Perines, 2018). Moreover, educational practices are not static, and they may change over time as new evidence and understandings emerge. Thus, educators need to be prepared to adapt to these changes while still addressing the needs of all stakeholders.

Another challenge is that the use of empirical evidence in education requires a deep understanding of research methods, like qualitative, quantitative, and mixed. Educators must be able to critically evaluate research studies and determine how the findings can be applied in their specific educational context. They must also be able to design and conduct their research to address the unique challenges of their educational setting (García & Castro, 2017).

Furthermore, the complexity of education means that there are multiple approaches to teaching and learning that need to be considered. Educators must be able to adapt their pedagogical practices to accommodate different learning styles, abilities, and cultural backgrounds. This requires a deep understanding of the social and cultural contexts in which education takes place and a commitment to inclusivity and diversity.

And, regarding higher education, each institution establishes its own educational projects, where the pedagogical approaches should be addressed and used to reach learning goals, including the curricular contents of each one of the academic programs, where both students and teachers are involved in developing behaviors that will help to encourage a positive learning, creating and transfer of knowledge. Besides, teaching practice is influenced by political and social forces (Cañedo & Figueroa, 2012).

Despite these challenges, embracing the scientific practice of education can lead to more effective and informed educational practices. By using empirical evidence to inform teaching and learning, educators can make evidence-based decisions that have been rigorously tested and validated. This can lead to more significant improvements in student learning outcomes, higher levels of student engagement, and better retention rates.

Hence, the scientific practice of education is an essential dimension of education that requires careful consideration and attention. Educators must navigate the complexity of education, critically evaluate research findings, and adapt their pedagogical practices to accommodate different learners' needs and abilities. Ultimately, by embracing the scientific practice of education, educators can create more inclusive and effective learning environments that benefit all stakeholders. How can we address such challenges from the educational practices' perspective? What is one of the proposed paradigms that will help practitioners to address the complex challenges already discussed? In the following paragraphs, an innovative approach is proposed.

AN INNOVATIVE WAY OF ADDRESSING EDUCATIONAL CHALLENGES

Although some holistic and transdisciplinary pedagogical approaches had been revised and proposed (Carmona, 2004; Correa de Molina, 2012; Saavedra et al., 2012; Sarchi, 2018; Burnard, et al., 2021; Contreras, 2021), as a product of the same concerns of understanding the complexities of our reality and the educational practice, where there are different views, methodologies and paradigms, a current dialogue to integrate such pointviews is the motivation of this work.

Polymathic pedagogy provides a framework for addressing the complexity of education by recognizing the interconnectedness of different dimensions of education. This pedagogy emphasizes the importance of an integrative and holistic approach to learning that considers the complexity of the reality, the complexity of the human being, the complexity of society, the complexity of the environment, and the complexity of the scientific practice of education. The polymathic pedagogy offers an approach that recognizes the interrelation of these dimensions and provides a framework for addressing them in an integrative and holistic manner, because there are many different interconnected systems that interact with each other in complex ways. This pedagogy emphasizes the importance of a systemic approach to learning that acknowledges the interdependence of different knowledge systems.

Polymathic pedagogy is a proposed way of teaching and learning, which is grounded in the unity of knowledge. This pedagogy draws upon disciplinary, interdisciplinary, multidisciplinary, and transdisciplinary approaches to provide different theoretical and practical perspectives on the learning-teaching process. Polymathic pedagogy acknowledges the diversity of knowledge and the need for a systemic ap-

proach to learning. This pedagogy fosters a collaborative approach where students and teachers work together to learn and apply knowledge. The integration of knowledge systems in polymathic pedagogy is essential in understanding complex problems and issues that require an interdisciplinary approach.

At the same time, under the unity of knowledge, polymathic pedagogy recognizes that all knowledge and information systems are interdependent, and therefore, a systemic approach is required to understand the interconnectivity and relationships between them. The polymathic pedagogy recognizes that no single discipline can provide a comprehensive understanding of complex issues and problems. Therefore, it is essential to incorporate different disciplines to provide different perspectives on the same issue or problem. The integration of knowledge systems provides a holistic approach to learning that enhances critical thinking and problem-solving skills. Also, it acknowledges that complex issues and problems require the integration of different disciplines to provide a comprehensive understanding. Interdisciplinary approaches foster collaboration and communication between different disciplines, which enhances critical thinking and problem-solving skills, which include developing and applying multiple perspectives from alternative viewpoints, create a common ground between conflicting theories from two or more disciplines, resulting in individuals who had more comprehensive understanding of any problem (National Academy of Sciences, National Academy of Engineering e Institute of Medicine, 2005). The polymathic pedagogy emphasizes the importance of interdisciplinary approaches by incorporating or using different methods from one discipline to another in the learning-teaching process. This approach allows educational practitioners to gain a deeper understanding of complex issues and problems. However, the goal of interdisciplinary remains within the framework of disciplinary research (Nicolescu, 2014).

What else is included in polymathic pedagogy? Multidisciplinary approach is also essential in this new way of teaching and learning. This approach recognizes that different disciplines have different perspectives on the same issue or problem. The multidisciplinary approach allows educational practitioners to gain knowledge from different disciplines, which enhances their understanding of complex issues and problems. The polymathic pedagogy emphasizes the importance of the multidisciplinary approach by incorporating different disciplines in the learning-teaching process.

On the other hand, transdisciplinary approach is at the same level essential in polymathic pedagogy. This approach recognizes that different disciplines need to collaborate to address complex issues and problems. The transdisciplinary approach fosters collaboration between different disciplines, which enhances critical thinking and problem solving, in other words, a pragmatic paradigm. Besides, under the transdisciplinary approach knowledge crosses disciplinary and sectorial boundaries to develop an integrated one for science and society, there is a common goal setting, and draws contributions from specific scientific disciplines (Wright et al., 2015).

However, applying polymathic pedagogy can be challenging. Integrating different disciplines requires the use of a common way of transferring knowledge, or a "language", including research methods and techniques, that could be time consuming. Besides, the value of integrating different disciplines cannot be seen by the practitioners because they are focused on addressing research issues from their own disciplines which are defined within the framework of a particular discipline, and the nature of the research problem cannot be applicable to another discipline area (Visholm et al., 2012). Additionally, the context of current research in academic institutions is organized on traditional paradigm where there are knowledge silos (where the information is not shared or distributed to other entities), creating barriers on collaboration between different disciplines, in the so-called "hard" and "soft" sciences, grounded in the way epistemologies and methodologies within disciplines were conceived throughout the history of science. This created the belief that scientific disciplines are communities in which "tribal" barriers can arise driving behaviors that scientists are unwilling to change because they had developed a perspective by their own experience, and having a perspective that interdisciplinary scientists are less capable than specialized ones (Siedlok & Hibbert, 2014). Also, the academic environment is conditioned for specific disciplines too, where recognition and rewards are just for those who pursue specialization in one narrow area and discourages researchers from being adventurous to explore other scientific disciplines. This is reflected in the lack of opportunities and platforms to present their insights (Ramakrishna, 2023).

To overcome those challenges, a shift in the paradigm thinking about how we teach, use, and apply scientific knowledge. The starting point for the current and future trends of higher education is to consider the complexity of the reality in teaching and learning processes to prepare students and teachers to be capable individuals to deal with uncertainty (Castañeda, 2023).

Conclusion

Education, with all its theories and practices, is a complex process of internal and external development of the teacher and learner, and the result of external influences stemming from their decisions. This fact encompasses the notion of change of the human being, together with his reality, linking education with the concept of knowing it. True education teaches the routes of the biological being of man; the routes of the mind (rationality and cognition) for knowledge and science; the routes of the heart for art, poetry, music and dance; and other routes of transcendence, like spirituality. In this way, the aim is to make this planet a unity with the cosmos where life reigns in its most diverse manifestations, which will make the happy and joyful existence of all humanity possible. Authentic education is based on the conception of the human being; the educational phenomenon has always presupposed a conception of man.

Consequently, it is key to study the meaning of the human being so that—as far as possible—its physical, biological, mental, emotional, and environmental dimensions can be described, which will serve as a basis for implementing an authentic pedagogy.

The objectives of past and current pedagogical systems were not aligned with the real development of the human being. They are primarily interested in the development of the mind, the cognitive or rational part, leaving aside the biological dimension of the human being; they are not interested in bodily and emotional understanding.

The essential purpose of education, in the holistic and comprehensive conception, is the integral, multifaceted, and genuine development of human consciousness, which encompasses the physical, biological, mental and environmental dimensions, interrelating natural and biological aspects with sociocultural dimensions and developing in a continuous and spiral manner in the different stages of human life. Integral education is based on perennial philosophy, which holds that the person is a network of dynamic and multifaceted relationships of complex totalities; a complex and harmonious network of physical, chemical, psychic, mental, social forces, and energies—in other words, man is a complex vibrational field totality participating in the cosmos or universe. Knowledge itself highlights the multidimensionality of reality, where disciplinary specialization with its reductive and partial interpretations is not enough to unravel the universe phenomenon.

Polymath pedagogy advocates for comprehensive education that recognizes the physical, cognitive, socioemotional, and environmental dimensions of the human person, but using different methods from various disciplines. It is assumed that the physical, cognitive and socioemotional dimensions are based on current knowledge, and the one that will be discovered in the future. All the dimensions that configure the human being are not objects of characterization, it is only considered a strength to develop the best attributes and understanding that the species has. In this sense, it is postulated that the current pedagogies do not develop the true sense of integral education, expressed in the structure of the human being as a bio-psycho-social one. However, polymath pedagogy should not be viewed as a "panacea", because it recognizes that there are more and different ways of perceiving reality.

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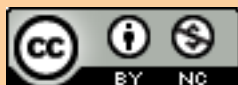
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